CLAIMS

What is claimed is:

1. A color liquid crystal display comprising:

a plurality of layers including a liquid crystal layer; and

a backlight comprising at least one first light guide for coupling red light, at least one second light guide for coupling green light, and at least one third light guide for coupling blue light, said first light guide, said second light guide, and said third light guide being positioned to illuminate a surface of said liquid crystal layer.

2. The display of Claim 1 further comprising a red LED optically coupled to said first light guide, a green LED optically coupled to said second light guide, and a blue LED optically coupled to said third light guide.

3. The display of Claim 1 wherein first light guide comprises a plurality of light guides receiving red light, said second light guide comprises a plurality of light guides receiving green light, and said third light guide comprises a plurality of light guides receiving blue light.

4. The display of Claim 3 wherein said first light guide, said second light guide, and said third light guide comprise fiber optic cables arrange adjacent and parallel to each other.

5. The display of Claim 4 wherein said fiber optic cables have deformities to cause light to leak out of said fiber optic cables.

6. The display of Claim 5 wherein said deformities are positioned such that light leaks out of said fiber optic cables only in areas corresponding to pixel positions.

7. The display of Claim 1 wherein said first light guide, said second light guide, and said third light guide have deformities to cause light to leak out of each said light guide.

8. The display of Claim 7 wherein said deformities are positioned such that light leaks out of each said light guide only in areas corresponding to pixel positions.

9. The display of Claim 8 wherein said deformities are arranged in columns to coincide with columns of pixels.

10. The display of Claim 1 wherein each said light guide include lenses for collimating light exiting each said light guide.

11. The display of Claim 1 wherein each of said first light guide, said second light guide, and said third guide is a transparent sheet, said first light guide overlying said second light guide, and said third light guide overlying said second light guide.

12. The display of Claim 1 wherein said plurality of layers comprises:

a first polarizing filter;

an energizing array;

a liquid crystal layer; and

a second polarizing filter.

13. The display of Claim 12 wherein said energizing array is a thin film transistor array.

14. The display of Claim 12 wherein said plurality of layers lacks a color filter.

15. A method performed by a color liquid crystal display, said display comprising a plurality of layers including a liquid crystal layer; and a backlight comprising at least one first light guide for coupling red light, at least one second light guide for coupling green light, and at least one third light guide for coupling blue light, said first light guide, said second light guide, and said third light guide being positioned to illuminate a surface of said liquid crystal layer, said method comprising:

energizing a red light emitting diode (LED) optically coupled to said first light guide;

energizing a green LED optically coupled to said second light guide;

energizing a blue LED optically coupled to said third light guide; and

selectively controlling said liquid crystal layer to display an image comprising a combination of red, green, and blue light.

16. The method of Claim 15 wherein said first light guide, said second light guide, and said third light guide comprise fiber optic cables arrange adjacent and parallel to each other.

17. The method of Claim 15 wherein said first light guide, said second light guide, and said third light guide have deformities to cause light to leak out of each said light guide, and

wherein said energizing each said LED causes light to reflect off said deformities and exit each said light guide only in areas corresponding to pixel positions.

18. The method of Claim 17 wherein said deformities are arranged in columns to coincide with columns of pixels.

19. The method of Claim 15 wherein each of said first light guide, said second light guide, and said third guide is a transparent sheet, said first light guide overlying said second light guide, and said third light guide overlying said second light guide.

20. The method of Claim 15 wherein said plurality of layers comprises a first polarizing filter, a thin film transistor array, said liquid crystal layer, and a second polarizing filter, said selectively controlling said liquid crystal layer comprising:

selectively activating transistors in said thin film transistor array.